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SUGAR-CONTAINING AMPHIPHILIC OLIGOMERS

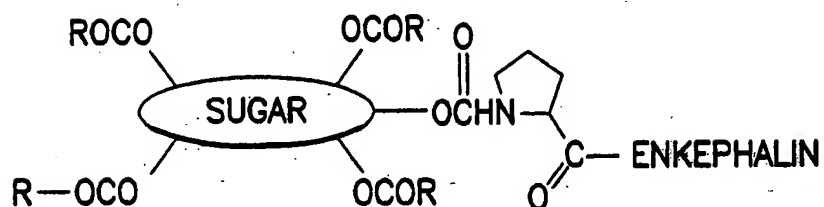


FIG.1A

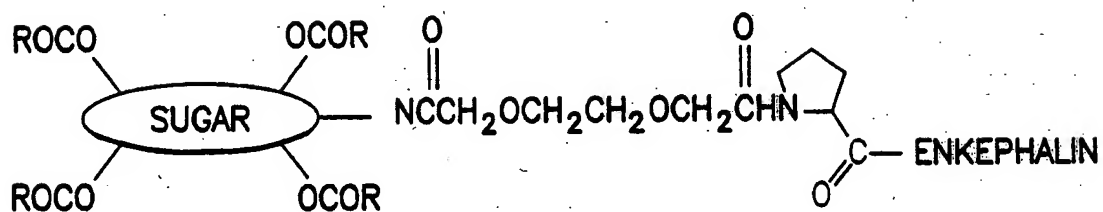


FIG.1B

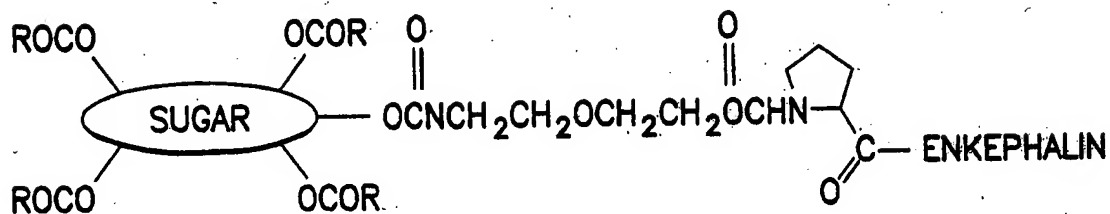


FIG.1C

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STABILITY OF ENKEPHALIN AND CETYL-PEG₂-ENKEPHALIN
IN RAT BRAIN HOMOGENATE

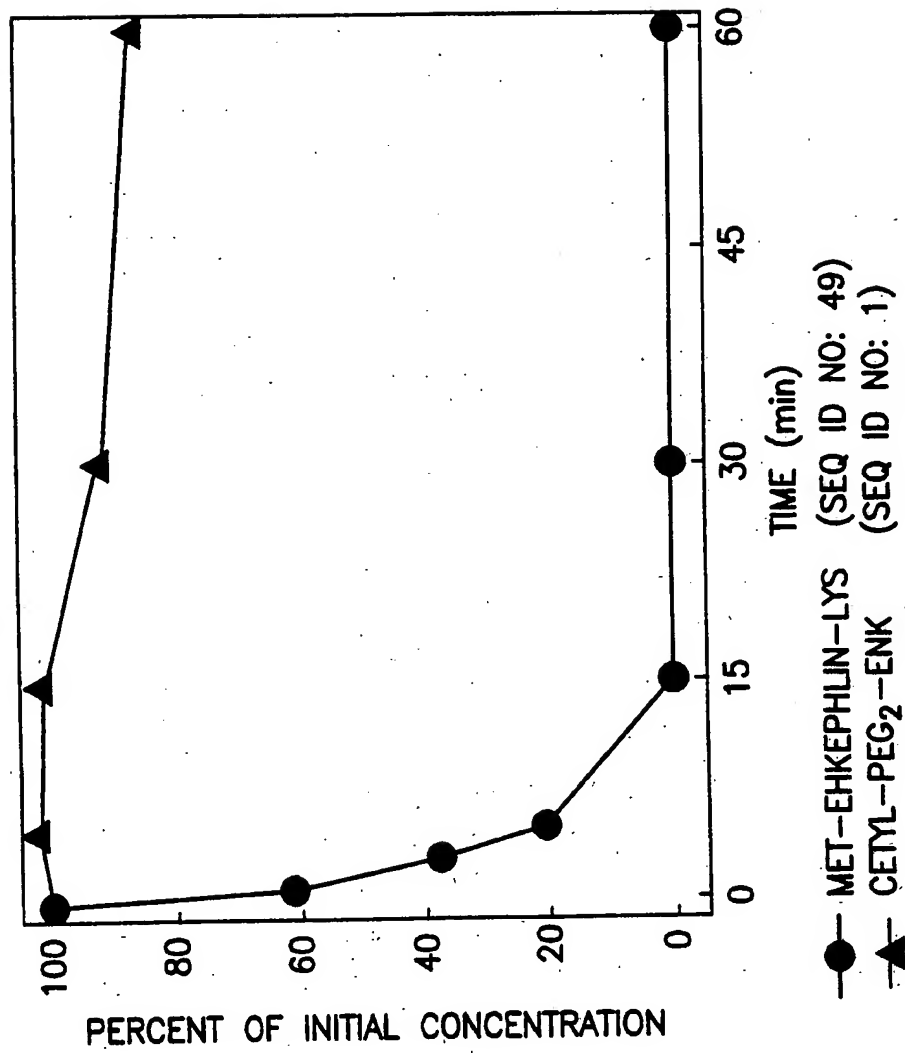


FIG.2

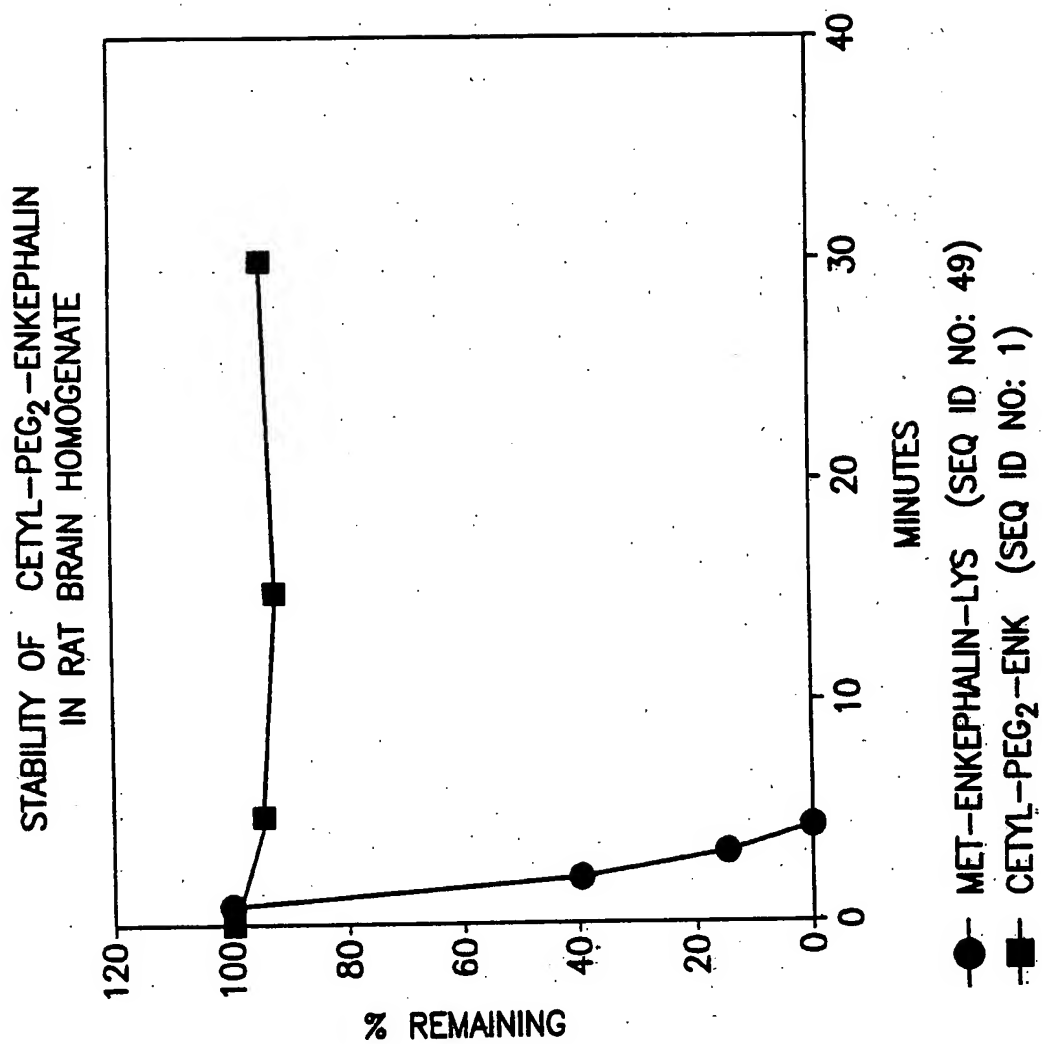


FIG. 3

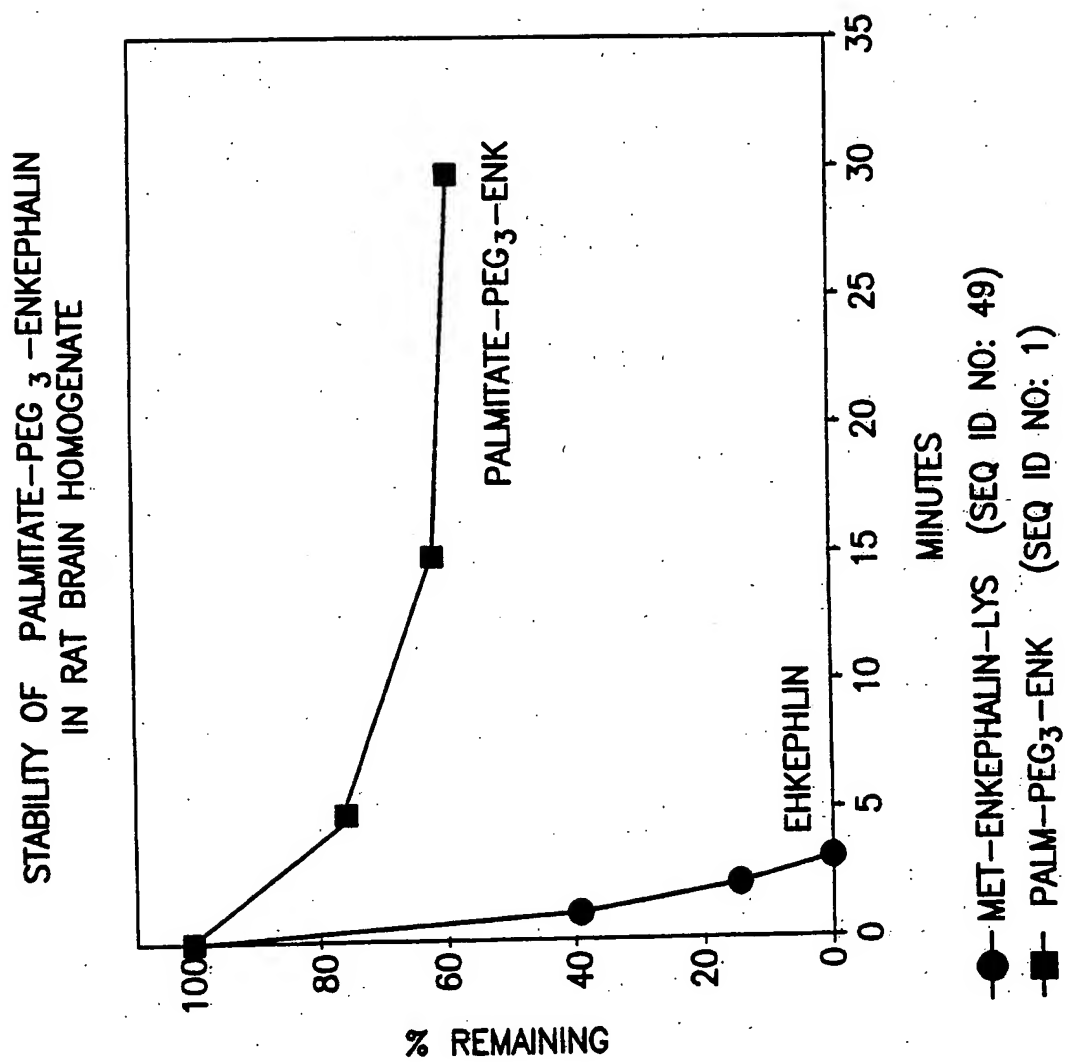


FIG.4

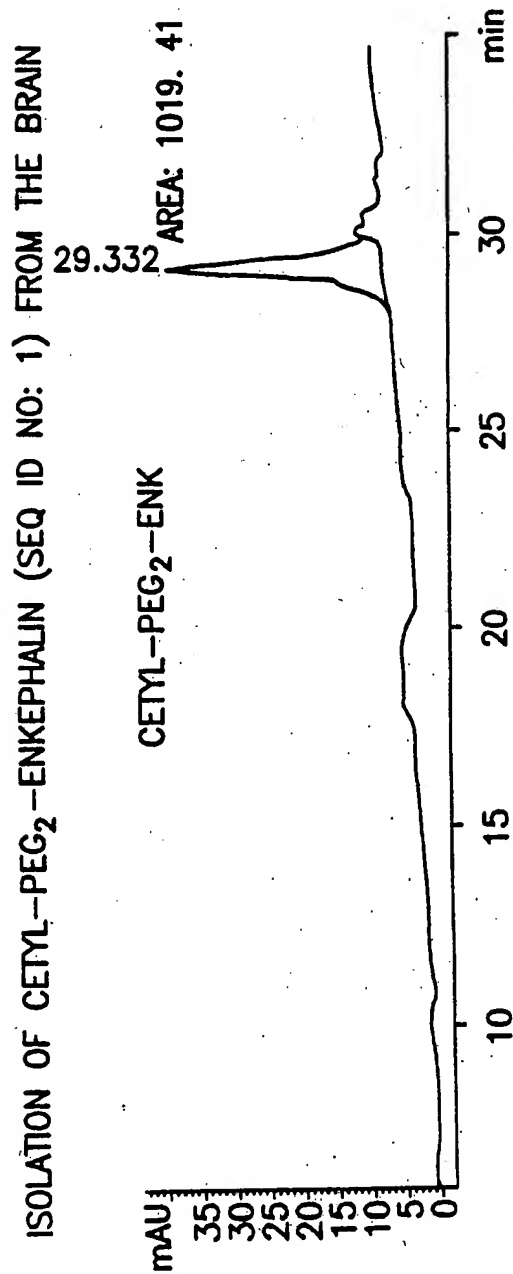


FIG. 5A

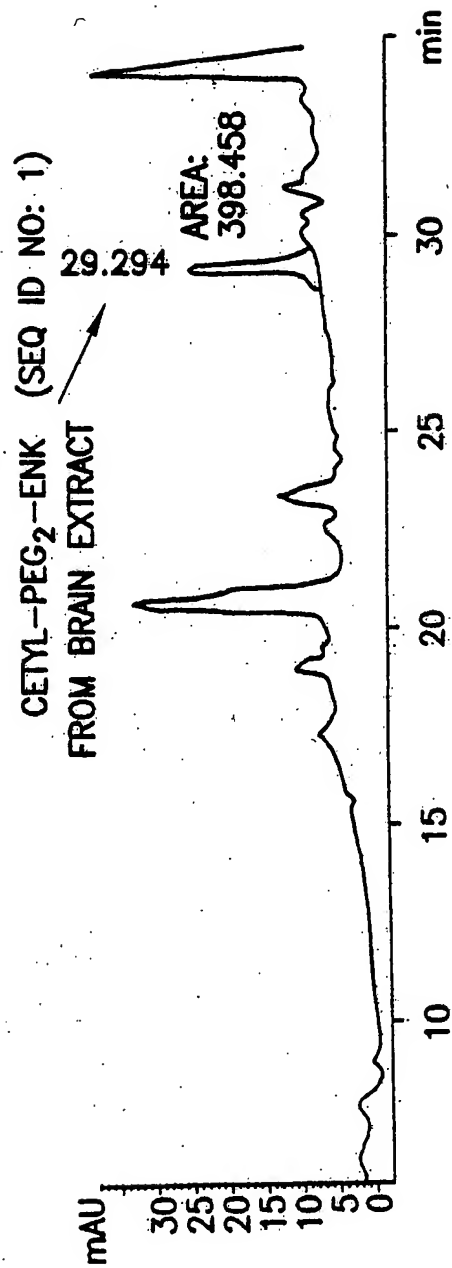


FIG. 5B

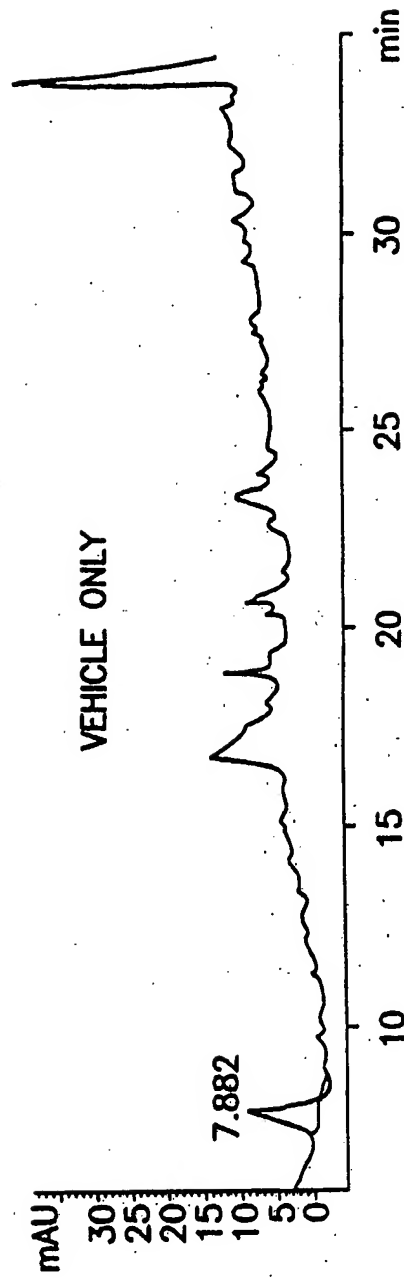


FIG.5C

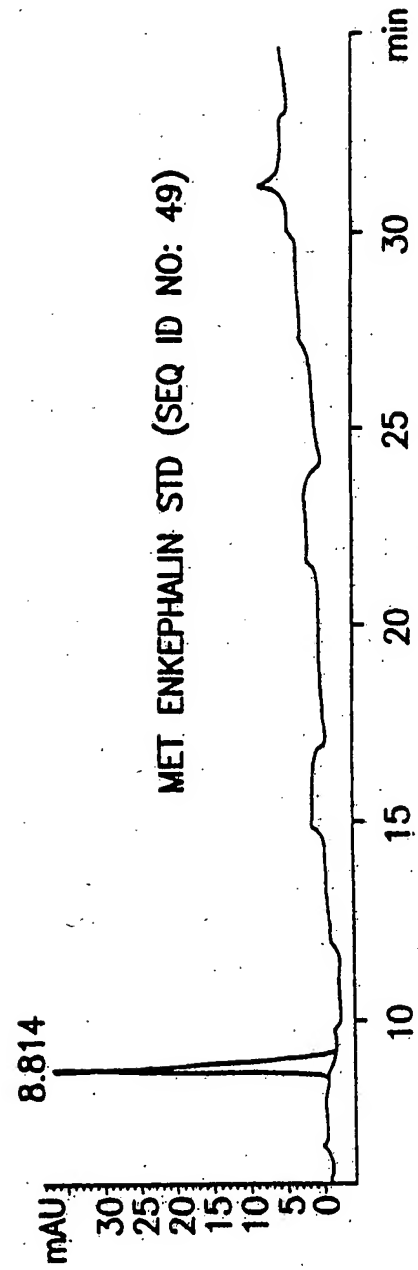


FIG.5D

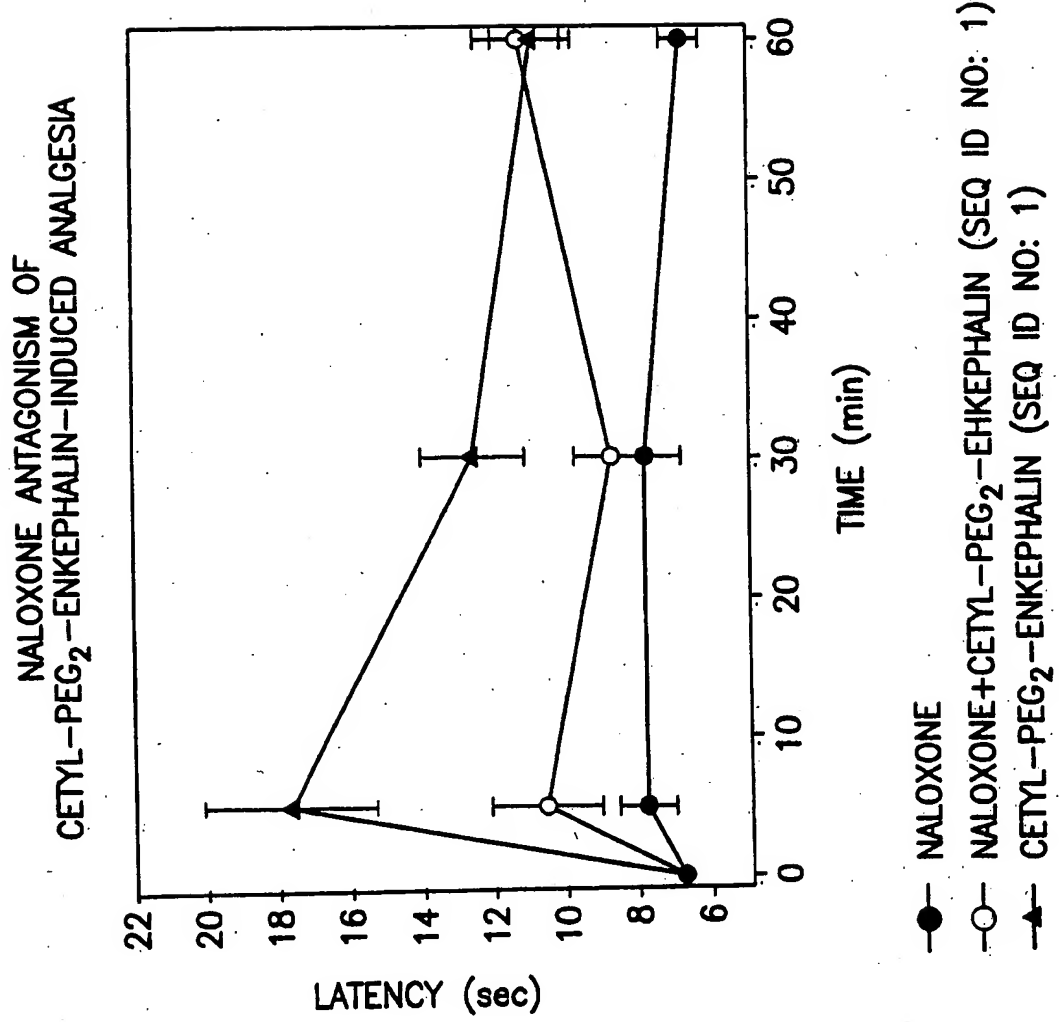


FIG.6

ANALGESIC EFFECT OF A 5 mg/kg IV DOSE OF CETYL-PEG₂-ENKEPHALIN (SEQ ID NO: 1)
MONOCONJUGATE IN THE RAT HOT-PLATE ASSAY

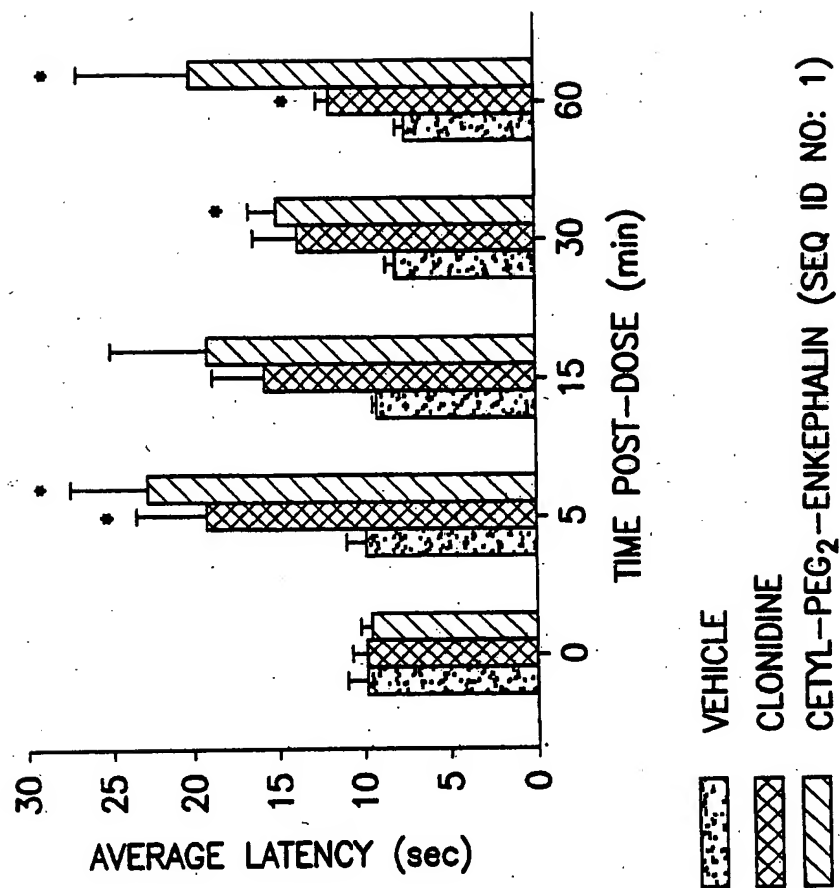
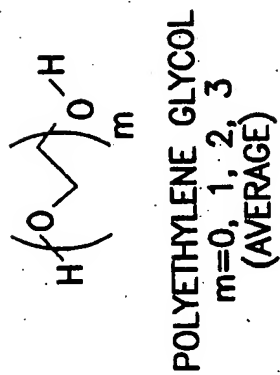


FIG.7

COMPARISON OF μ -RECEPTOR BINDING AFFINITY OF ENKEPHALIN CONJUGATES		
DRUG OR CONJUGATE	DETAILED STRUCTURE	% SPECIFIC BINDING
NALOXONE	NALOXONE	100
ENKEPHALIN	MET-ENKEPHALIN-LYS (SEQ ID NO: 49)	67
CETYL-ENK	CETYL-PEG ₂ -ENK (SEQ ID NO: 1)	100
CHOL-ENK	CHOLESTEROL-PEG ₃ -ENK (SEQ ID NO: 1)	95
DHA-ENK	DHA-PEG ₂ -ENK (SEQ ID NO: 1)	63
PALM-ENK	PALMITATE-PEG ₃ -ENK (SEQ ID NO: 1)	76
CETYL-TEG-ENK	CETYL-PEG ₃ -ENK (SEQ ID NO: 1)	100

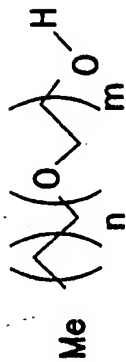
FIG.8

SYNTHESIS OF OLIGOMER



BASE

ADDITION



AMPHIPHILIC POLYMER

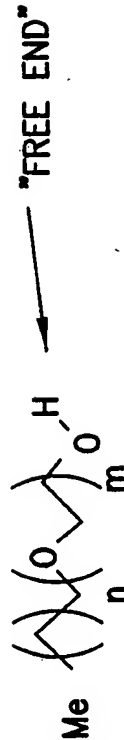
"FREE END"



AMPHIPHILIC POLYMER

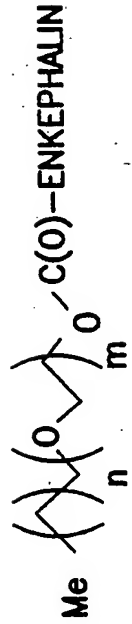
FIG.9

ATTACHMENT OF OLIGOMER TO ENKEPHALIN



ACTIVATION

ENKEPHALIN



OLIGOMER-ENKEPHALIN-CONJUGATE

EXAMPLE $m=14$ AND $n=2$ CETYL-PEG₂-ENKEPHALIN

FIG.10